ETHICS AND SOCIAL RESPONSIBILITIES FOR SCIENTISTS AND ENGINEERS IN THE 21ST CENTURY (2019)

General

Welcome to Ethics and Social Responsibilities for Scientists and Engineers in the 21st Century

Description: The course addresses ethical dilemmas that researchers might face in turbulent times, where clear-cut distinctions between pure and applied science can no longer be upheld, and try to create a space where the participating PhD students can qualify their reflections on their role as young researchers by drawing on philosophical, sociological, and ethical perspectives in analyzing possibilities and problems of contemporary science, engineering and technology. During the course the participants are asked to ethically analyze their own PhD projects, and present their analyses. To facilitate the ethical analyses of PhD projects a number of topical case-studies and relevant analytical tools are presented.

You will find all course information here on Moodle. You will find the texts and the tasks for each day in one folder.

The course is designed so that each day is split up into two sessions: One before lunch and one after. Usually a session begins with a lecture (90 minutes, including breaks) followed by discussions or group work.

During the last session on the third day participants are kindly asked to do a PP presentation on ethical issues in their Ph.D. project (duration: no more than 15 minutes). We will use the group work and discussions during the first two days to qualify your presentation. It is, however a good idea, to begin reflecting on ethical issues in your project when you read the course material.

Reading the text material connected to the lectures, and preparing a PP presentation on ethical aspects of your Ph.D. project, are mandatory activities for all participants.

I hope you will have some enlightening and reflective days.

Best Regards Tom Børsen

Organizer: Associate professor Tom Børsen, Aalborg University, email: boersen@plan.aau.dk

Lecturers: External Lecturer and Honorary Associate Professor Klavs Birkholm

ECTS: 2.5

Time: 12-14 June 2019, 9:00-16:00

Place: Frederikskaj 10A, building D, room 4.133

Zip code: 2450

City: Copenhagen

Number of seats: 30

Deadline: 22 May 2019

Important information concerning PhD courses: We have over some time experienced problems with no-show for both project and general courses. It has now reached a point where we are forced to take action. Therefore, the Doctoral School has decided to introduce a no-show fee of DKK 5,000 for each course where the student does not show up. Cancellations are accepted no later than 2 weeks before start of the course. Registered illness is of course an acceptable reason for not showing up on those days. Furthermore, all courses open for registration approximately three months before start. This can hopefully also provide new students a chance to register for courses during the year. We look forward to your registrations.

News from secretary and teacher

Grading the course - please do not delete

Hidden from students

Topic 1

Materials

Files, slides, etc.

Articles, readings etc.

Session 1: Ethical Judgments in Technology.

June 12, 09.00 to 12.00.

Lecturer Klavs Birkholm, Aalborg University.

How to identify ethical dilemmas in the development and implementation of new technologies. How can we proceed with reflections and judgments on such dilemmas?

Readings:

1. Birkholm, Klavs (2013). *The Ethical Judgment. Teaching and Learning Techno-Ethics*. Reprint (2019) on TeknoEtik.org: https://llk.dk/uzh1ae

2. Børsen, T., & Danborg, P. B. (2015). "Techno-Anthropological Ethics and Health Information Systems Technologies". In L. Botin, P. Bertelsen, & C. Nøhr (red.), *Techno-Anthropology in Health Informatics: Methodologies for improving human -- technology relations.* (Vol. 215, s. 83-94). IOS Press. (Studies in Health Technology and Informatics).

3. Birkholm, K. (2013). "Human Enhancement as Techno-Anthropology par excellence". In L. Botin & T. Børsen (red.), *What is Techno-Anthropology?* (p. 91-116). Aalborg: Aalborg Universitetsforlag. (Serie om Lærings-, forandrings- og organisationsudviklingsprocesser/Series in Transformational Studies; Nr. 1, Vol. 2).

Session 2: Scientific Social Responsibility.

June 12, 13.00 to 16.00.

Lecturer Tom Børsen. Aalborg University.

Tools enabling participants to make qualified ethical judgments on existing, new or emerging technologies and techno-scientific projects are presented and linked to reflections on the civil responsibility of scientists, engineers and technologists.

Readings:

1. Børsen, T. (2013). Extended Report from Working Group 5: Social Responsibility ofScientists at the 59th Pugwash Conference on Science and World Affairs in Berlin, 1–4 July 2011. In *Science and Engineering Ethics*, 19:299–308.

2. Rotblat, J. (1985). Leaving the bomb project. *Bulletin of the Atomic Scientists*, 41:16-19.

3. Casanova, J. (1995). Review of Postmodern Ethics by Zygmunt Bauman. In *Contemporary Sociology*, 24(4):424-425.

Session 3: User involvement, uncertainty management and valuesensitive design

June 13, 9.00 to 12.00.

Lecturer Tom Børsen. Aalborg University.

Ethical dilemmas arising when vested interests come into conflict with the traditional ethos of science and engineering. Strategies to handle such dilemmas are discussed. External stakeholders expect to a higher degree than previously to be involved in the research process. In this session we discuss some models for how to involve external stakeholders can be involved in knowledge production and technological design.

Readings:

1. Funtowicz,S. and Ravetz, J. (1993). Science for the post-normal age. In *Futures* 25:735-755.

2. René von Schomberg (2007). *From the ethics of technology towards an ethics of knowledge policy & knowledge assessment*. Bruxelles: European Commission, Directorate General for Research.

3. Saloranta, T. (2001). Post-normal science and the global climate change issue. In *Climatic Change* 50:395–404.

4. Cummings, L. (2006). Integrating Ethics in Design through the Value-Sensitive Design Approach. In *Science and Engineering Ethics* 12 :701-715

5. Manders-Huits, N. (2011). What Values in Design? The Challenge of Incorporating Moral Values into Design. In *Science and Engineering Ethics.*

6. Taebi, B & Kadak, A.C. (2010). Integrating Considerations Affecting the Future of Nuclaer Power: Equity as a Framework for Assessing Fuel Cycles. In *Risk Analysis* 30(9):1341-1362.

Session 4: Ethical norms and scientific methods - how can the two conjoin?

June 13, 13.00 to 16.00.

Lecturer Klavs Birkholm, Aalborg University.

Working in the fields of natural sciences and engineering, many researchers face great difficulties when facing choices of values. This ought not be so. - Moreover, the claim to "neutrality" nowadays often results in cognitive displacements, e.g. in the use of algorithms.

Readings:

1. Flyvbjerg, B. (2001). *Making Social Science Matter*. Cambridge: Cambridge University Press. - Chapters: 5. "Values in social and political inquiry" (pp. 53-65) and 8. "Empowering Aristotle" (pp. 110-128).

2. O'Neill, Cathy. "How Can We Stop Algorithms Telling Lies" in: *The Guardian* 18 July 2017. (Participants are warmly welcomed to further reading in O'Neill, Cathy (2016). *Weapons of Mass Destruction*. London: Allen Lane.)

Session 5: Ethical Issues in participants' projects

June 14, 9.00 to 16.00.

Presentations by the participants. Chair: Klavs Birkholm (4.133) and Tom Børsen (3.133), Aalborg University.

By drawing on the perspectives introduced in the previous themes, the final session challenges the participants themselves to make their own personal qualified reflections on how to act socially and ethical responsibly in familiar research setting.

Hence, during this session you will get the chance to present what ethical issues you find present in your Ph.D. project. Course readings, presentations and group work and discussions have hopefully prepared all of you for this task.

A presentation should take no longer than 15 minutes, which will allow for questions and comments.

The presentations should address the following issues:

- What ethical issues are identified in the project?
- Analyses of the issues. Are the issues ethical dilemmas? Which ethical norms are involved?
- How can the issues be handled?
